

INK JET RECORDING HEAD AND METHOD OF PRODUCING A PLATE  
MEMBER FOR AN INK JET RECORDING HEAD

This is a divisional of Application No. 09/489,893 filed  
January 24, 2000; <sup>Now U.S. Pat 6,666,547</sup> the disclosure of which is incorporated herein  
5 by reference. TN

BACKGROUND OF THE INVENTION

The present invention relates to an ink jet recording head in  
which a piezoelectric vibrator of a longitudinal vibration mode is  
used as a driving source, and more particularly to a structure of  
10 an elastic plate which receives a pressure due to a displacement  
of a piezoelectric vibrator, and also to a method of producing  
such a plate.

In order to improve the recording density, the pitch of  
nozzle opening rows tends to be reduced. To comply with this  
15 tendency, a single crystal silicon wafer is isotropically etched,  
and a nozzle plate and an elastic plate which are produced another  
method are fixed to the etched wafer, thereby configuring a  
channel unit. A displacement of a piezoelectric vibrator is  
transmitted to the channel unit so as to produce a pressure in a  
20 pressure generating chamber, and an ink droplet is ejected from a  
nozzle opening by the pressure.

When pressure generating chambers are arranged in high  
density, each of the pressure generating chambers has a very small  
width. In order to cause the whole of the longitudinal direction